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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,391

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Marcus Baertele

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EXAMINER

SEMENENKO, YURIY

ART UNIT

PAPER NUMBER

2841

NOTIFICATION DATE

DELIVERY MODE

09/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/598,391	Applicant(s) BAERTELE, MARCUS	
	Examiner YURIY SEMENENKO	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/03/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Preliminary Amendment filed on 01/03/2007 has been entered.
Claims 1 - 10 have been cancelled. Claims 11-30 are newly added.
Claims 11-30 are now pending in the application.

Drawings

- 2.1. The drawings are objected to because missing numeral 5, as it is described in specification, page 4, line 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
- 2.2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "6b" has been used to designate both "contacts" and "via holes". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Specification is objected to because of the following informalities:

- 1) line 3: " Printed circuit" does not correlate with title "Printed circuit board".
- 2) Instead of "a section at right angles through a printed circuit board" better to rephrase as – cross sectional view -.
- 3) Confusing : reference character "6b" has been used to designate both "contacts" (page 4, line 13) and "via holes" (page 4, lines 16-17).

Appropriate correction is required.

Claim Objections

4. Claim 11 is objected to because of the following informalities:

Claim 11, line 5: confusing "electrical components via holes being provided in the printed circuit-to connect the two films". It should be - electrical components__ via holes being provided in the printed circuit __ to connect the two films - .

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugaya et al., (US 6538210) hereinafter Sugaya.

As to claims 11 and 22: Sugaya discloses in Fig. 4 an arrangement for increasing a packing density on a printed circuit with surface mounted electrical components the printed circuit comprising: two films 211 and 209 pressed against one another with a dielectric 200 arranged between them; and at least one of mutually opposite faces of the films being fitted with surface mounted electrical components 403a and 403b, Fig. 4B , via holes 208 being provided in the printed circuit to connect the two films, wherein each via hole of the via holes are a direct connection between the mutually opposite faces of the films.

As to claims 12 and 27: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11(22), further comprising further surface mounted electrical components 904b, 904c, Fig. 9A arranged on faces 902aa3 and 902aa2 of the two films which are not mutually opposite.

As to claims 13 and 23: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11(22), further comprising a further layer of a dielectric 905b, Fig. 9A and a further film 902aa1 being applied to at least one face of the printed circuit.

As to claim 14: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, wherein the two films 209 and 211, Fig. 2 contain copper (col. 13:37-38).

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As to claim 15: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, further comprising first contacts 402c and 402c, Fig.4 formed on at least one face of the printed circuit 400 (col. 18:56-63).

As to claim 16: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 13, wherein the via holes 913, Fig. 9B are formed between the two films 901 and the further film 912 (col. 25:30-38).

As to claim 17: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11, wherein the surface mounted electrical components 403b, Fig. 4 are resistors, coils or capacitors (col. 11:57-60 and col. 17:43).

As to claim 18: Sugaya discloses in Fig. 9A a stack 900 having a plurality of printed circuits 909 and 910, as claimed in claim 11 arranged one on top of another.

As to claim 19: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 14, wherein the via holes 913, Fig. 9B are formed between the two films 901 and a further film 912 (col. 25:30-38).

As to claim 20: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 15, wherein the via holes 913, Fig. 9B are formed between the two films 901 and a further film 912 and (col. 25:30-38).

As to claims 21 and 26: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 11(22), wherein the two films are compressed films (col. 14:16-25, 56-67)).

As to claims 24 and 25: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, wherein the via holes are

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microvias (col. 14:34-39) are produced by one of drilling (col. 1: 23-25), electroplating and etching processes (col.11:50-52).

As to claim 28: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, further comprising embedding the surface mounted electrical components 103a, Fig. 1 in the dielectric 101 (col. 10:40-60)..

As to claim 29: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, further comprising soldering 1012, Fig. 10 and (col. 26:25-26) the surface mounted electrical components 1004 to the two films 1011.

As to claim 30: Sugaya discloses the arrangement having all of the claimed features as discussed above with respect to claim 22, further comprising providing first contacts 902a3, Fig. 9B which are formed on at least one face 901c of the two films 909 such that electrical connections are made to another printed circuit 910.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mowatt et al. – US 5432677;

Muramatsu et al. – US 7345246.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yuriy Semenenko/

Examiner, Art Unit 2841

/Jeremy C. Norris/

Primary Examiner, Art Unit 2841